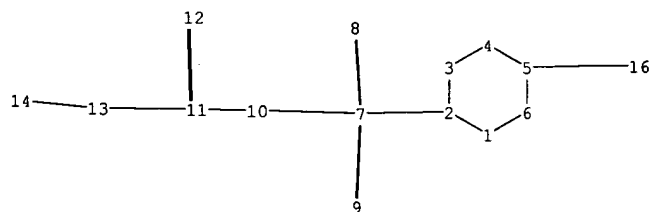


Part I



chain nodes :

7 8 9 10 11 12 13 14 16

ring nodes :

1 2 3 4 5 6

chain bonds :

2-7 5-16 7-8 7-9 7-10 10-11 11-12 11-13 13-14

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6

exact/norm bonds :

1-2 1-6 2-3 2-7 3-4 4-5 5-6 5-16 7-8 7-9 7-10 10-11 11-12
11-13 13-14

isolated ring systems :

containing 1 :

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:CLASS 9:CLASS
10:Atom 11:CLASS 12:CLASS 13:CLASS 14:CLASS 16:Atom

Generic attributes :

16:

Saturation : Unsaturated

STN Columbus

DICTIONARY FILE UPDATES: 21 JUN 2005 HIGHEST RN 852656-52-1

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TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

```
*****
*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*
*****
```

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:

<http://www.cas.org/ONLINE/DBSS/registryss.html>

=>

L12 STRUCTURE UPLOADED

=> s l12

SAMPLE SEARCH INITIATED 19:45:32 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 154 TO ITERATE

100.0% PROCESSED 154 ITERATIONS

35 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**

BATCH **COMPLETE**

PROJECTED ITERATIONS: 2336 TO 3824

PROJECTED ANSWERS: 346 TO 1054

L13 35 SEA SSS SAM L12

=> d l13 1 5 10 35

L13 ANSWER 1 OF 35 REGISTRY COPYRIGHT 2005 ACS on STN

RN 688307-45-1 REGISTRY

ED Entered STN: 01 Jun 2004

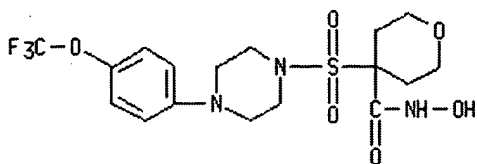
CN 2H-Pyran-4-carboxamide, tetrahydro-N-hydroxy-4-[[4-[4-
(trifluoromethoxy)phenyl]-1-piperazinyl]sulfonyl]- (9CI) (CA INDEX NAME)

FS 3D CONCORD

MF C17 H22 F3 N3 O6 S

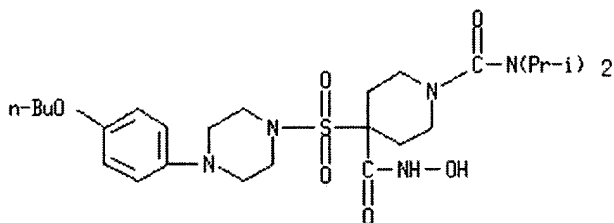
CI COM

SR CA



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

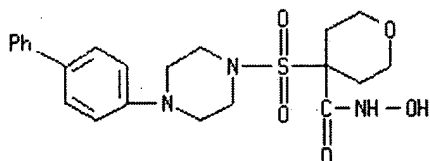
L13 ANSWER 5 OF 35 REGISTRY COPYRIGHT 2005 ACS on STN
 RN 622395-09-9 REGISTRY
 ED Entered STN: 01 Dec 2003
 CN 1,4-Piperidinedicarboxamide, 4-[[4-(4-butoxyphenyl)-1-piperazinyl]sulfonyl]-N4-hydroxy-N1,N1-bis(1-methylethyl)- (9CI) (CA INDEX NAME)
 FS 3D CONCORD
 MF C27 H45 N5 O6 S
 CI COM
 SR CA
 LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L13 ANSWER 10 OF 35 REGISTRY COPYRIGHT 2005 ACS on STN
 RN 622394-60-9 REGISTRY
 ED Entered STN: 01 Dec 2003
 CN 2H-Pyran-4-carboxamide, 4-[(4-[1,1'-biphenyl]-4-yl-1-piperazinyl)sulfonyl]tetrahydro-N-hydroxy- (9CI) (CA INDEX NAME)
 FS 3D CONCORD
 MF C22 H27 N3 O5 S
 CI COM
 SR CA
 LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL

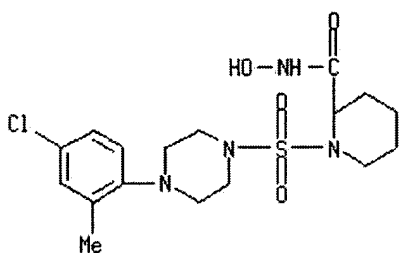


STN Columbus

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L13 ANSWER 35 OF 35 REGISTRY COPYRIGHT 2005 ACS on STN
RN 210915-73-4 REGISTRY
ED Entered STN: 06 Sep 1998
CN 2-Piperidinecarboxamide, 1-[[4-(4-chloro-2-methylphenyl)-1-piperazinyl]sulfonyl]-N-hydroxy- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C17 H25 Cl N4 O4 S
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=>

L14 STRUCTURE UPLOADED

=> s l14

SAMPLE SEARCH INITIATED 19:48:28 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 154 TO ITERATE

100.0% PROCESSED 154 ITERATIONS
SEARCH TIME: 00.00.01

5 ANSWERS

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 2336 TO 3824
PROJECTED ANSWERS: 5 TO 234

L15 5 SEA SSS SAM L14

=> file caplus

COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
9.94	380.64

FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE	TOTAL
ENTRY	SESSION
0.00	-3.65

CA SUBSCRIBER PRICE

FILE 'CAPLUS' ENTERED AT 19:48:39 ON 22 JUN 2005

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FILE COVERS 1907 - 22 Jun 2005 VOL 142 ISS 26
FILE LAST UPDATED: 21 Jun 2005 (20050621/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l15

L16 2 L15

=> d l16 1-2 bib abs hitstr

L16 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2005 ACS on STN

Full Text

AN 2005:409509 CAPLUS

DN 142:463765

TI Preparation of piperidiny- and piperazinylsulfonylmethyl hydroxamic acids and their use as protease inhibitors

IN Brown, David L.; Grapperhaus, Margaret L.; Kassab, Darren J.; Massa, Mark A.; McDonald, Joseph J.; Mullins, Patrick B.; Rico, Joseph G.; Schmidt, Michelle A.

PA Pharmacia Corporation, USA

SO PCT Int. Appl., 644 pp.

CODEN: PIXXD2

DT Patent

LA English

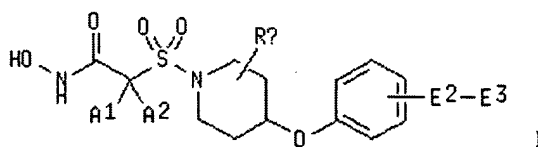
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005042521	A2	20050512	WO 2004-US36666	20041103
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRAI US 2003-700202 A 20031103

GI

Later



AB Title compds. I [A1-2 = H, alkyl, alkoxyalkyl, etc.; Rx = halo, CN, OH, NO₂, etc.; E2 = CO, COO, OCO, amino, etc.; E3 = alkyl, alkenyl, alkynyl, etc.] are prepd. For instance, 4-[[4-(5-butylpyrazin-2-yl)piperazin-1-yl]sulfonyl]-N-(hydroxy)tetrahydro-2H-pyran-4-carboxamide•2HCl (II) is prepd. in 8 steps from 1-(tert-butoxycarbonyl)piperazine, 2-chloropyrazine, butylmagnesium chloride, bis(2-bromoethyl)ether and O-(tetrahydro-2H-pyran-2-yl)hydroxyamine. II exhibits K_i = >10,000 nM for MMP-1, 1.52 nM for MMP-2, 0.696 nM for MMP-9, 1.82 nM for MMP-13 and 4290 nM for MMP-14. I are useful for the treatment of conditions assocd. with MMP activity and/or aggrecanase activity.

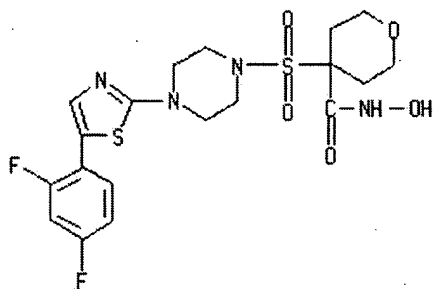
IT 622385-43-7P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. of piperidinyl- and piperazinyl-sulfonylmethyl hydroxamic acids and their use as matrix metalloproteinase inhibitors)

RN 622385-43-7 CAPLUS

CN 2H-Pyran-4-carboxamide, 4-[[4-[5-(2,4-difluorophenyl)-2-thiazolyl]-1-piperazinyl]sulfonyl]tetrahydro-N-hydroxy-, monohydrochloride (9CI) (CA INDEX NAME)



HCl

L16 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2005 ACS on STN

Full Text

AN 2003:875282 CAPLUS

DN 139:364961

TI Preparation of piperidinyl- and piperazinyl-sulfonylmethyl hydroxamic acids and their use as protease inhibitors

IN Barta, Thomas E.; Becker, Daniel P.; Bedell, Louis J.; Boehm, Terri L.; Brown, David L.; Carroll, Jeffery N.; Chen, Yiyuan; Fobian, Yvette; Freskos, John N.; Gasiecki, Alan F.; Grapperhaus, Margaret; Heintz, Robert M.; Hockerman, Susan L.; Kassab, Darren J.; Khanna, Ish Kumar; Kolodziej, Stephen A.; Massa, Mark; McDonald, Joseph; Mischke, Brent V.; Mischke, Deborah A.; Mullins, Patrick B.; Nagy, Mark; Norton, Monica B.; Rico, Joseph G.; Schmidt, Michelle A.; Stehle, Nathan W.; Talley, John J.; Vernier, William F.; Villamill, Clara I.; Wang, Lijuan Jane; Wynn, Thomas A.

STN Columbus

PA Pharmacia Corporation, USA; et al.
 SO PCT Int. Appl., 819 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2003091247	A2	20031106	WO 2003-US13123	20030425	
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	RW:			GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG		
	CA 2483314	AA	20031106	CA 2003-2483314	20030425	
	US 2005009838	A1	20050113	US 2003-618288	20030425	
	EP 1501827	A2	20050202	EP 2003-718529	20030425	
	R:			AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK		
	BR 2003009671	A	20050503	BR 2003-9671	20030425	
PRAI	US 2002-375598P	P	20020425			
	US 2002-380713P	P	20020515			
	US 2002-392021P	P	20020627			
	WO 2003-US13123	W	20030425			
OS	MARPAT 139:364961					
GI						

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Title compds. I [A1 and A2 together with the C to which they are bonded join to form (un)substituted-heterocyclyl or -carbocyclyl, or A1 and A2 are independently selected from H, alkyl, alkoxyalkyl, alkenyl, alkynyl, etc.; Rx = H, halo, CN, OH, NO2, alkyl, alkenyl, alkoxy, alkoxyalkyl, heterocyclyl, etc.; Y = N, CH, or CRx; E1 = (un)substituted heteroaryl; E2 = O, CO, C(O)O, OC(O), bond, S, etc.; E3 = halo, CN, (un)substituted-alkyl, -alkenyl, -alkynyl, -heterocyclyl, heterocyclylalkyl, etc.] and their pharmaceutically acceptable salts are prepd. and disclosed as protease inhibitors. Thus, e.g., II·HCl was prepd. with piperazine ring formation occurring via cyclization of 2,2,2-trifluoroethoxyaniline (prepn. given) with N,N-di(2-chloroethyl)methylsulfonamide (prepn. given) to provide piperazinyl intermediate III which was converted in five addnl. steps to the desired product. This invention is directed generally to proteinase (also known as 'protease') inhibitors, and more particularly, inhibitors of matrix metalloproteinase (also known as 'matrix metalloproteinase' or 'MMP') activity and/or aggrecanase activity. In assays to det. inhibition consts. (Ki) against MMP-1, MMP-2, MMP-9, MMP-13 and MMP-14, I possessed values ranging from 0.13->10,000. This invention also is directed to compns. of such hydroxamic acids, intermediates for the syntheses of such hydroxamic acids, methods for making such hydroxamic acids, and methods for treating conditions (particularly pathol. conditions) assocd. with MMP activity and/or aggrecanase activity.

IT 622393-21-9P 622393-48-0P 622393-63-9P
 622394-04-1P

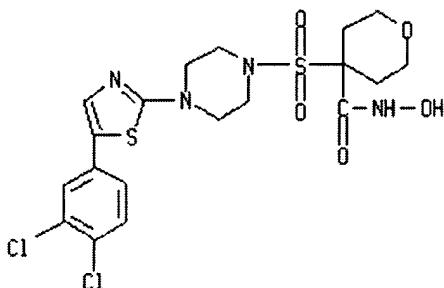
STN Columbus

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(claimed compds.; prepn. of piperidinyl-and piperazinyl-sulfonylmethyl hydroxamic acids and their use as matrix metalloproteinase inhibitors)

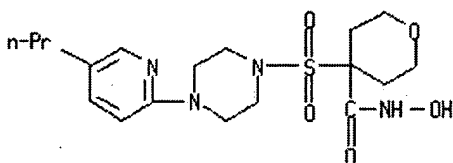
RN 622393-21-9 CAPLUS

CN 2H-Pyran-4-carboxamide, 4-[[4-[5-(3,4-dichlorophenyl)-2-thiazolyl]-1-piperazinyl]sulfonyl]tetrahydro-N-hydroxy- (9CI) (CA INDEX NAME)



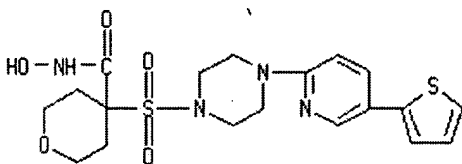
RN 622393-48-0 CAPLUS

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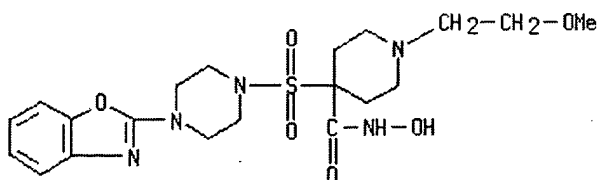
RN 622393-63-9 CAPLUS

CN 2H-Pyran-4-carboxamide, tetrahydro-N-hydroxy-4-[[4-[5-(2-thienyl)-2-pyridinyl]-1-piperazinyl]sulfonyl]- (9CI) (CA INDEX NAME)



RN 622394-04-1 CAPLUS

CN 4-Piperidinecarboxamide, 4-[[4-(2-benzoxazolyl)-1-piperazinyl]sulfonyl]-N-hydroxy-1-(2-methoxyethyl)- (9CI) (CA INDEX NAME)



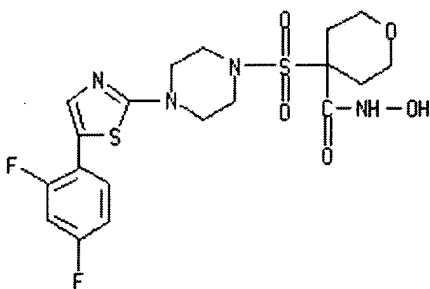
IT 622385-43-7P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. of piperidinyl- and piperazinyl-sulfonylmethyl hydroxamic acids and their use as matrix metalloproteinase inhibitors)

RN 622385-43-7 CAPLUS

CN 2H-Pyran-4-carboxamide, 4-[[4-[5-(2,4-difluorophenyl)-2-thiazolyl]-1-piperazinyl]sulfonyl]tetrahydro-N-hydroxy-, monohydrochloride (9CI) (CA INDEX NAME)



HCl

=> file caold

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

10.33

390.97

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

-1.46

-5.11

FILE 'CAOLD' ENTERED AT 19:49:06 ON 22 JUN 2005

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FILE COVERS 1907-1966

FILE LAST UPDATED: 01 May 1997 (19970501/UP)

This file contains CAS Registry Numbers for easy and accurate substance identification. Title keywords, authors, patent assignees, and patent information, e.g., patent numbers, are now searchable from 1907-1966. TIFF images of CA abstracts printed between 1907-1966 are available in the PAGE display formats.

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This file supports REGISTRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

=> s l15

L17 . 0 L15

=>